PATENT ABSTRACTS OF JAPAN

(11)Publication number : 09-191455

(43)Date of publication of application : 22.07.1997

(51)Int.Cl. H04N 7/18
G08B 13/18
G08B 23/00
// H04N 1/00

(21)Application number : 08-001325

(22)Date of filing : 09.01.1996

(71)Applicant : CANON INC

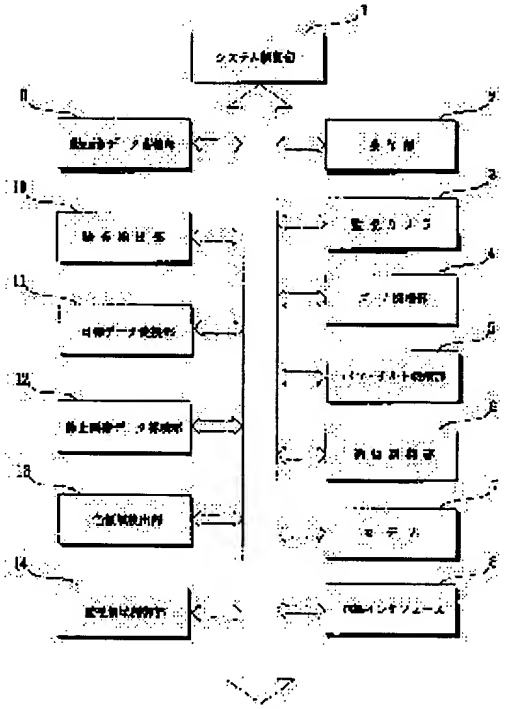
(72)Inventor : HAGYUDA TADASHI

(54) MONITOR SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To permit the resident himself of a general house to monitor the presence or absence of the occurrence of abnormality from a remote location and to freely set a fine monitor area.

SOLUTION: The monitor system is provided with a monitor camera 3 taking the designated monitor area, a movement detection part 10 detecting the movement of a picture among moving picture data inputted from the monitor camera 3, a picture data conversion part 11 converting moving picture data where movement is detected by the movement detection part 10 into still picture data and a communication control part 6 controlling still picture data converted by the picture data conversion part 11 to be transmitted to a facsimile equipment in a remote place. When the movement of the picture exists in moving picture data inputted from the monitor camera 3, abnormality is judged to occur, and a data frame from which the movement is detected is converted into still picture data so as to transmit it to the facsimile equipment existing by the user. Thus, the user can monitor the presence or absence of the occurrence of abnormality from the remote place.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] JP 409191455A

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

JAPANESE [JP,09-191455,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] About monitoring system, especially this invention is used, when performing absence ****** in a general residence etc., and it is suitable.
[0002]
[Description of the Prior Art] It was common that projected on a monitor the image photoed by the surveillance camera in the monitoring system used for security, such as office, and a guard always supervised the monitor image by viewing until now. Moreover, the monitor of ****** in a general residence was performed by installing a sensor etc. by the contract with a security company. That is, when the abnormal condition of ****** was detected by the sensor etc., it was made as [report / to a security company / it].
[0003]
[Problem(s) to be Solved by the Invention] However, since the monitor always had to be viewing the monitor in the monitoring system used for security, such as office shown in the above-mentioned conventional example, in order to detect an abnormal occurrence, it was unsuitable, although it uses when supervising ****** in a common residence at the time of going out.
[0004] On the other hand in the system for absence ****** shown in the above-mentioned conventional example, complicated procedure, such as a contract with a security company, had to be performed, and it was troublesome. moreover, the texture which a monitor field is fixed to the field set up by the security company in many cases, and a user desires since a monitor is performed through a third person called a security company -- it was difficult to realize a setup of a warm monitor field.
[0005] when this invention is made in view of the above-mentioned point and it performs absence ****** in a common residence, while the resident of the residence itself enables it to supervise the existence of an abnormal occurrence from a going-out place -- texture -- it aims at enabling it to set up a warm monitor field freely.
[0006]
[Means for Solving the Problem] The surveillance camera which photos the monitor field where the monitoring system of this invention was specified, A motion detection means to detect a motion of an image out of the dynamic-image data inputted from the above-mentioned surveillance camera, An image data-conversion means to change into static-image data the dynamic-image data by which the motion was detected by the above-mentioned motion detection means, It has a communications control means to control the static-image data changed by the above-mentioned image data-conversion means to transmit to the facsimile apparatus of the exterior located in a remote place according to a facsimile communications protocol.
[0007] The surveillance camera which photos the monitor field where the place by which it is characterized [of this invention / other] was specified, A dynamic-image data accumulation means to store the dynamic-image data inputted from the above-mentioned surveillance camera, A motion detection means to detect a motion of an image by comparing the data frame before [one] being accumulated in the current data frame and the above-mentioned dynamic-image data accumulation means which were inputted from the above-mentioned surveillance camera, An image data-conversion means to change into static-image data the data frame by which the motion of an image was detected by the above-mentioned motion detection means, It has a communications control means to control the static-image data changed by the above-mentioned image data-conversion means to transmit to the facsimile apparatus of the exterior located in a remote place according to a facsimile communications protocol.
[0008] It carries out that the place by which it is characterized [of others of this invention] is further equipped with a color field detection means detect the field of the color set up beforehand out of the static-image data received by receiving means receive static-image data from the facsimile apparatus of the above-mentioned exterior, and the above-mentioned receiving means, and the monitor field control means which control the monitor field of the above-mentioned surveillance camera to carry out the full screen display of the color field detected by the above-mentioned color field detection means as the description.
[0009] A zoom means for the place by which it is characterized [of others of this invention] to realize zoom actuation of the above-mentioned surveillance camera, The pantilt means for realizing pantilt actuation of the above-mentioned surveillance camera, A receiving means to receive static-image data from the facsimile apparatus of the above-mentioned exterior, A static-image data accumulation means to store the static-image data received by the above-mentioned receiving means, So that the full screen display of the color field detected by color field detection means to detect the field of the color set up beforehand out of the static-image data stored in the above-mentioned static-image data accumulation means, and the above-mentioned color field detection means may be carried out It is characterized by having further the monitor field control means which operates the above-mentioned zoom means and the above-mentioned pantilt means, and controls the monitor field of the above-mentioned surveillance camera.
[0010] It carries out that the place by which it is characterized [of others of this invention] is further equipped with a receiving means receive static-image data from the facsimile apparatus of the above-mentioned exterior, a configuration detection means detect the configuration set up beforehand out of the static-image data received by the above-mentioned receiving means, and the monitor field control means that perform control of the monitor field beforehand set up corresponding to the configuration detected by the above-mentioned configuration detection means as the description.
[0011] A zoom means for the place by which it is characterized [of others of this invention] to realize zoom actuation of the above-mentioned surveillance camera, The pantilt means for realizing pantilt actuation of the above-mentioned surveillance camera, A receiving

means to receive static-image data from the facsimile apparatus of the above-mentioned exterior, A static-image data accumulation means to store the static-image data received by the above-mentioned receiving means, A configuration detection means to detect the configuration set up beforehand out of the static-image data stored in the above-mentioned static-image data accumulation means, It is characterized by having further the monitor field control means which operates the above-mentioned zoom means and the above-mentioned pantilt means, and is made to perform control of the monitor field beforehand set up corresponding to the configuration detected by the above-mentioned configuration detection means.

[0012] The place by which it is characterized [of others of this invention] is characterized by the above-mentioned monitor field control means receiving only the monitor zone control based on the static-image data sent from the facsimile apparatus beforehand set up as a communication link place.

[0013] The place by which it is characterized [of others of this invention] is characterized by changing into static-image data the data frame of the dynamic-image data photoed by the above-mentioned surveillance camera after control of the monitor field by the above-mentioned monitor field control means, and making it surely transmit to the facsimile apparatus of the above-mentioned exterior.

[0014] When according to this invention constituted as mentioned above the dynamic-image data inputted from the surveillance camera are analyzed automatically and a motion of an image is detected in dynamic-image data, it is judged as what abnormalities generated, the dynamic-image data with which the motion was detected are changed into static-image data, and it comes to be transmitted to external facsimile apparatus. This becomes possible [supervising the existence of an abnormal occurrence easily from a remote place] by putting external facsimile apparatus on a user's basis.

[0015] Moreover, if according to other descriptions of this invention a user writes in a predetermined color field or a predetermined mark and transmits it into the static-image data received as mentioned above at a monitoring system side using facsimile apparatus, a monitor field will come to be changed corresponding to the color field or mark.

[0016] Moreover, according to the description of others of this invention, only the zone control from the facsimile apparatus beforehand specified as a communication link place is received, and the zone control from the facsimile apparatus which is not specified comes to be disregarded.

[0017] Moreover, since according to the description of others of this invention the dynamic-image data photoed about the new monitor field after modification are surely changed into static-image data and come to be transmitted to external facsimile apparatus when the monitor field of a surveillance camera is changed according to assignment of a user, it becomes possible to check the monitor field after modification.

[0018]

[Embodiment of the Invention] Hereafter, the monitoring system which carried out this invention is explained to a detail with reference to a drawing. Drawing 1 is the block diagram showing the configuration of the monitoring system which is the 1st operation gestalt of this invention.

[0019] In this drawing, 1 is the system control section and controls the whole monitoring system of this operation gestalt. 2 is a control unit and is for inputting control data, such as various commands, into this monitoring system. This control unit 2 consists of a keyboard and a mouse.

[0020] 3 is a surveillance camera, photos the specified monitor field and inputs the dynamic-image data of the monitor field. 4 is the zoom device section and is for realizing the zoom function of the above-mentioned surveillance camera 3. 5 is the pantilt feature section and is for realizing pantilt actuation of the above-mentioned surveillance camera 3.

[0021] 6 is the communications control section, and in order to transmit the static-image data changed from dynamic-image data by the image data-conversion section 11 mentioned later to the facsimile apparatus (not shown) of the exterior in a remote place, it performs communications control according to a facsimile communications protocol.

[0022] 7 is a modem, and in case it performs the communication link which followed the facsimile communications protocol in the above-mentioned communications control section 6, it performs modulation processing of a sending signal, and recovery processing of an input signal. 8 is a circuit interface for connecting this monitoring system to the analog public line network which is not illustrated.

[0023] 9 is the dynamic-image data accumulation section, and is for accumulating the data frame of the dynamic-image data inputted from the above-mentioned surveillance camera 3. 10 is a motion detecting element, compares the data frame before [one] being accumulated in the current data frame and the above-mentioned dynamic-image data accumulation section 9 which were inputted from the above-mentioned surveillance camera 3, and detects "a motion" of an image from the difference.

[0024] The image data-conversion section 11 mentioned above takes out a brightness component from the data frame by which "the motion" was detected by the motion detecting element 10, performs binarization processing by the general binarization technique (systematic dither method and error diffusion method etc.), and changes dynamic-image data into the static-image data for transmitting to facsimile apparatus through ITU-TS advice T.4 coding further.

[0025] 12 is the static-image data accumulation section, and is for storing the static-image data changed from dynamic-image data in the above-mentioned image data-conversion section 11, and the static-image data received from external facsimile apparatus (not shown) through the above-mentioned communications control section 6.

[0026] 13 is a color field detecting element and detects the field smeared away by the color set up beforehand out of the static-image data which were received through the communications control section 6 from the facsimile apparatus of the above-mentioned exterior, and were stored in the static-image data accumulation section 12. 14 is a monitor field control section and controls the monitor field of the above-mentioned surveillance camera 3 to carry out the full screen display of the color field detected by the above-mentioned color field detecting element 13.

[0027] Drawing 2 is a flow chart which shows actuation of the monitoring system by this operation gestalt constituted as mentioned above. In this drawing, the dynamic-image data which photoed the monitor field with the surveillance camera 3 at step S200 are inputted first.

[0028] At the following step S201, in the motion detecting element 10, the current data frame inputted from the surveillance camera 3 at the above-mentioned step S200 is compared with the data frame before [one] being accumulated in the dynamic-image data accumulation section 9, and those difference is detected.

[0029] Next, at step S202, a judgment whether based on the difference detected at the above-mentioned step S201, "the motion" has arisen in the image photoed by the surveillance camera 3 is made. And when "a motion" is not detected in an image, it progresses to step S203, and when "a motion" is detected, it progresses to step S204 noting that abnormalities occur.

[0030] At step S203, the current data frame inputted from the surveillance camera 3 at the above-mentioned step S200 is accumulated in

the dynamic-image data accumulation section 9. Then, return and same processing are repeatedly carried out to processing of step S200. Moreover, at step S204, binarization processing of the data frame from which "the motion" was detected at the above-mentioned step S202, and transform processing to facsimile data (static-image data) are performed by the image data-conversion section 11.
[0031] After processing of the above-mentioned step S204 finishes, it progresses to step S205. At this step S205, the facsimile data changed at the above-mentioned step S204 are sent out through a modem 7 and the circuit interface 8 to the facsimile apparatus (not shown) of the exterior set up beforehand according to the ITU-TS advice T.30 based on control by the communications control section 6.
[0032] Drawing 3 is a flow chart which shows the actuation at the time of the monitoring system by this operation gestalt changing into static-image data the dynamic-image data inputted from the surveillance camera 3. In this drawing, a judgment whether "the motion" was first detected in the dynamic-image data inputted by the motion detecting element 10 from the surveillance camera 3 at step S300 is made. Here, when "a motion" is detected, it progresses to step S301, and when "a motion" is not detected, processing is ended, without doing anything.
[0033] At step S301, binarization processing by the general binarization technique (the systematic dither technique, error diffusion method) is performed by the image data-conversion section 11 to the data frame of the dynamic image with which "the motion" was detected at the above-mentioned step S300. Next, selection in the mode at the time of performing coding by the ITU-TS advice T.4 at step S302 is performed.
[0034] Here, when MH (Modified Huffuman) coding is chosen, step S303 and MR (Modified READ) coding are chosen and step S304 and MMR (modified modified read) coding are chosen, it progresses to step S305, respectively.
[0035] At step S303, MH coding processing is performed by the above-mentioned step S301 to the image data by which binarization was carried out. Moreover, at step S304, MR coding processing is performed by the above-mentioned step S301 to the image data by which binarization was carried out. Moreover, at step S305, MMR coding processing is performed by the above-mentioned step S301 to the image data by which binarization was carried out.
[0036] After processing [which / of the above-mentioned steps S303-S305] is performed according to the decision in the above-mentioned step S302, it progresses to step S306. At this step S306, the static-image data encoded in processing [which / of the above-mentioned steps S303 S304, and S305] are transmitted to the facsimile apparatus of a remote place by the communication procedure which followed the ITU-TS advice T.30 through the communications control section 6.
[0037] The dynamic-image data inputted from the surveillance camera 3 are changed into static-image data through processing of the above steps S300-S306, and it is transmitted to the facsimile apparatus which is not illustrated.
[0038] Drawing 4 is a flow chart which shows the actuation at the time of controlling a surveillance camera 3 so that the monitoring system by this operation gestalt detects the field shown by the color set up beforehand and carries out the full screen display of the detected color field out of the static-image data received from the facsimile apparatus of the exterior which is not illustrated.
[0039] In this drawing, first, at step S400, reception of static-image data is performed and the received static-image data is stored in the static-image data accumulation section 12 from the facsimile apparatus currently installed in the remote place. When static-image data are not sent from the above-mentioned facsimile apparatus, it will be in a standby condition by processing of this step S400, and it waits until static-image data are sent.
[0040] If static-image data are sent and above-mentioned processing is performed from the above-mentioned facsimile apparatus next, it will be judged whether the monitoring system of this operation gestalt is set as the monitor field control mode which performs the full screen display of the field shown by the color set up beforehand at step S401. Here, when it is the monitor field control mode, it progresses to step S402, and when it is not the monitor field control mode, processing is ended, without doing anything.
[0041] At step S402, the search for finding out the field shown by the color set up beforehand out of the static-image data which were received from the above-mentioned facsimile apparatus and stored in the static-image data accumulation section 12 is performed by the color field detecting element 13. And it is judged whether the field by the color set up beforehand has detected out of received data at step S403. Here, when a color field is detected, it progresses to step S404, and when not detected, processing is ended, without doing anything.
[0042] At step S404, in order to make it the color field detected at the above-mentioned step S403 come to the core of a monitor field, pantilt control of a surveillance camera 3 is performed. In this processing, the address information of the core of the color field detected by the color field detecting element 13 is first sent out to the monitor field control section 14.
[0043] And in this monitor field control section 14, the deflection of the center position information which shows the center position of the image data which is carrying out the current monitor, and the address information which shows the core of a color field is computed. Next, based on this computed deflection, the pan angle and tilt angle control signal for moving a color field to the core of a monitor field are generated, and it is sent out to the pantilt feature section 5.
[0044] After processing of the above-mentioned step S404 progresses to step S405. At step S405, the length of the color field moved to the core of a monitor field at the above-mentioned step S404 and the die-length information on horizontal are sent out to the monitor field control section 14 from the color field detecting element 13. And the die length of length and width is compared in this color field and a current monitor field, and the suitable rate of a zoom is computed. In this way, the zoom control signal for carrying out the full screen display of the color field based on the computed rate of a zoom is generated, and it is sent out to the zoom device section 4.
[0045] It becomes possible to carry out the full screen display of the color field specified by the user from the facsimile apparatus of a remote place through processing of the above steps S400-S405.
[0046] Drawing 5 is drawing showing an example of the method of employing the monitoring system by this operation gestalt. In this drawing, a predetermined monitor field is photoed by the surveillance camera 3 of this monitoring system by (I). If a motion arises in the image (dynamic-image data) photoed at this time, that dynamic-image data will be changed into facsimile data (static-image data) in the image data-conversion section 11.
[0047] And the facsimile data changed by doing in this way are transmitted to the facsimile apparatus in a remote place set up beforehand through the communications control section 6. In addition, the color which should be detected shall already be set up at this time.
[0048] Next, in (II), in order for a user to check the received facsimile data and to control a monitor field, it is the color set up beforehand, and a field to carry out a full screen display is smeared away using a marker etc. And the image which did in this way and smeared away the desired field in the setting color is transmitted to the monitoring system of this operation gestalt using the above-mentioned facsimile apparatus.
[0049] In (III), the static-image data received from the above-mentioned facsimile apparatus are stored in the static-image data accumulation section 12. Moreover, in order that the field applied by the user by the color set up beforehand by the color field detecting

element 13 may be detected and may carry out the full screen display of the detected color field, pantilt control and zoom control of a surveillance camera 3 are performed. And after such pantilt control and zoom control are performed, photography is again performed by the surveillance camera 3.
[0050] In (IV), the dynamic-image data photoed considering the appointed field by the user as a full screen display in (III) are changed into facsimile data, and it is transmitted to the facsimile apparatus which has it in a user's basis. Out of the facsimile data received in (II), the user who received this facsimile data can expand a desired field, and can check now.
[0051] Thus, he changes into a static image one frame of the dynamic image photoed after camera control to the facsimile apparatus of the above-mentioned exterior after performing camera control shown in drawing 4 when the field of the color beforehand set up when monitoring system received the static-image data from external facsimile apparatus with this operation gestalt is detected in the static-image data, and is trying to surely transmit.
[0052] Since the image of the new monitor field can be checked from a remote place and it gets even if a motion is not detected all over the new monitor field after camera control by this, it can check whether the monitor field after remote control of a surveillance camera 3 is the monitor field of hope certainly.
[0053] As explained above, when it detects by having moved by the 1st operation gestalt to the dynamic-image data inputted from a surveillance camera 3, and having moved by the detecting element 10 and "a motion" is detected, the data frame is changed into static-image data by the image data-conversion section 11. And he is trying to transmit the data frame changed into static-image data to the facsimile apparatus currently installed in a user's basis through the communications control section 6. Thereby, in a remote place, a user can supervise the existence of an abnormal occurrence now easily.
[0054] Moreover, when the color field detecting element 13 detects the field applied by the color beforehand set up out of the static-image data received from facsimile apparatus and the monitor field control section 14 performs pantilt control and zoom control of a surveillance camera 3 based on the color field, it enables it to carry out the full screen display of the color field which the user set up with the 1st operation gestalt. This is enabled to specify the monitor field which a user desires in a remote place, and assignment of the fine monitor field which suited a user's needs more can be realized.
[0055] Next, the 2nd operation gestalt of this invention is explained. Drawing 6 is the block diagram showing the configuration of the monitoring system by the 2nd operation gestalt of this invention. In this drawing, since what attached the same sign as the sign shown in drawing 1 has the same function, the detailed explanation about this is omitted.
[0056] In drawing 6 , differing from the configuration of drawing 1 is the point of having formed the configuration detecting element 15 and the monitor field control section 16, instead of the color field detecting element 13 and the monitor field control section 14. This configuration detecting element 15 detects the mark (configuration) set up beforehand out of the static-image data which were received through the communications control section 6 from the facsimile apparatus of the exterior which is not illustrated, and were stored in the static-image data accumulation section 12.
[0057] Moreover, the monitor field control section 16 controls control of the monitor field beforehand set up corresponding to the mark detected by the above-mentioned configuration detecting element 15 to operate and perform the zoom device section 4 and the pantilt feature section 5. A mark can carry out a multi-statement according to the class of monitor zone control which it is going to perform.
[0058] Next, actuation of the monitoring system by the 2nd operation gestalt constituted as mentioned above is explained in order. The actuation at the time of changing into static-image data overall actuation of the monitoring system by this operation gestalt and the dynamic-image data inputted from the surveillance camera 3 is the same as the actuation shown in the flow chart of drawing 2 and drawing 3 , respectively.
[0059] Moreover, the actuation at the time of the monitoring system by this operation gestalt detecting the mark set up beforehand, and controlling a monitor field based on the detection result out of the static-image data received from the facsimile apparatus of the exterior which is not illustrated, is as being shown in the flow chart of drawing 7 .
[0060] In drawing 7 , first, at step S700, reception of static-image data is performed and the received static-image data is stored in the static-image data accumulation section 12 from the facsimile apparatus currently installed in the remote place. When static-image data are not sent from the above-mentioned facsimile apparatus, it will be in a standby condition by processing of this step S700, and it waits until static-image data are sent.
[0061] If static-image data are sent and above-mentioned processing is performed from the above-mentioned facsimile apparatus next, it will be judged whether it is set as the monitor field control mode to which the monitoring system of this operation gestalt controls a monitor field by step S701 based on the mark set up beforehand. Here, when it is the monitor field control mode, it progresses to step S702, and when it is not the monitor field control mode, processing is ended, without doing anything.
[0062] At step S702, the search for finding out the mark set up beforehand out of the static-image data which were received from the above-mentioned facsimile apparatus and stored in the static-image data accumulation section 12 is performed by the configuration field detecting element 15. And it is judged whether the mark set up beforehand has detected out of received data at step S703. Here, when a certain mark is detected, it progresses to step S704, and when not detected, processing is ended, without doing anything.
[0063] At step S704, when the monitor field control section 16 sends out a predetermined control signal to the zoom device section 4 and the pantilt feature section 5 through the system control section 1, control of the monitor field which the mark detected at the above-mentioned step S703 directs is performed.
[0064] Drawing 8 is a flow chart which shows concrete actuation of various monitor zone controls. In this drawing, the classification of the monitor zone control which the mark detected by the configuration detecting element 15 shows is judged at step S800. Here, when it is monitor field central point migration control, it progresses to step S801, when it is zoom control, it progresses to step S803, and when it is pantilt control, it progresses to step S805.
[0065] At step S801, when the classification of the monitor zone control which the mark detected at the above-mentioned step S800 directs is migration control of the central point, the positional information of the mark detected out of the static-image data received from external facsimile apparatus is computed. At continuing step S802, the pantilt feature section 5 is operated through the monitor field control section 16 so that the detected mark may come to the core of a monitor field based on the positional information computed at the above-mentioned step S801.
[0066] Moreover, at step S803, when the classification of the monitor zone control which the mark detected at the above-mentioned step S800 directs is zoom control, the rate of a zoom beforehand set up corresponding to the mark is chosen. At continuing step S804, the zoom device section 4 is operated through the monitor field control section 16 based on the rate of a zoom chosen at the above-mentioned step

S803.
[0067] Moreover, at step S805, when the classification of the monitor zone control which the mark detected at the above-mentioned step S800 directs is pantilt control, the pan angle and tilt angle beforehand set up corresponding to the mark are chosen. At continuing step S806, the pantilt feature section 5 is operated through the monitor field control section 16 based on the pan angle and tilt angle chosen at the above-mentioned step S805.
[0068] Control of various monitor fields is realized through processing of each above steps S800-S806.
[0069] Drawing 9 is drawing showing an example of the method of employing the monitoring system by this operation gestalt. In this drawing, a predetermined monitor field is photoed by the surveillance camera 3 of this monitoring system by (I). If a motion arises in the image (dynamic-image data) photoed at this time, that dynamic-image data will be changed into facsimile data (static-image data) in the image data-conversion section 11.
[0070] And the facsimile data changed by doing in this way are transmitted to the facsimile apparatus in a remote place set up beforehand through the communications control section 6. In addition, some marks which should be detected shall already be registered at this time.
[0071] Next, in (II), in order for a user to check the received facsimile data, for example, to require central point migration control of a monitor field, it writes in the part which wants to set the mark (for example, x mark) registered beforehand as the core of a monitor field. And the image which wrote the mark of x mark in the desired location in this way is transmitted to the monitoring system of this operation gestalt using the above-mentioned facsimile apparatus.
[0072] In (III), the static-image data received from the above-mentioned facsimile apparatus are stored in the static-image data accumulation section 12. Moreover, the mark written in by the user is detected by the configuration detecting element 15. It is recognized by this that central point migration control of a monitor field is demanded, the address information on the memory of the location where the mark of x mark was detected is computed, and it is outputted to the monitor field control section 16.
[0073] In the monitor field control section 16, the center position on a screen, a mark detection location, and the deflection signal of a between are computed from the address information outputted from the configuration detecting element 15, and the center position information which shows the center position on a screen. And the pan angle and tilt angle control signal for moving the location where the mark of x mark was detected to the center position on a screen based on this deflection signal are generated, it is sent out to the pantilt feature section 4, and pantilt control is performed.
[0074] Thus, by performing pantilt control, the monitor field centering on the location where the user wrote in the mark in (II) is newly set up, and the monitor field is photoed by the surveillance camera 3. The dynamic-image data photoed at this time are changed into facsimile data in (IV), and are transmitted to the facsimile apparatus which is in a user's basis again.
[0075] In addition, although drawing 9 is drawing showing the method of applying in the case of performing monitor field central point migration control, when performing zoom control for reference, the method of applying in the case of performing pantilt control is shown in drawing 10 and drawing 11 , respectively. In drawing 10 and drawing 11 , since flow rough only by differing from the case where the mark registered beforehand is drawing 9 is almost the same, detailed explanation is omitted here.
[0076] Thus, he changes into a static image one frame of the dynamic image photoed after camera control to the facsimile apparatus of the above-mentioned exterior after performing camera control shown in drawing 8 when the mark beforehand set up when monitoring system received the static-image data from external facsimile apparatus like the operation gestalt of ** a 1st also in this operation gestalt is detected in the static-image data, and is trying to surely transmit.
[0077] Since the image of the new monitor field can be checked from a remote place and it gets even if a motion is not detected all over the new monitor field after camera control by this, it can check whether the monitor field after remote control of a surveillance camera 3 is the monitor field of hope certainly.
[0078] As explained above, when it detects by having moved by the 2nd operation gestalt to the dynamic-image data inputted from the surveillance camera 3, and having moved by the detecting element 10 and "a motion" is detected, the data frame is changed into static-image data by the image data-conversion section 11. And he is trying to transmit the data frame changed into static-image data to the facsimile apparatus currently installed in a user's basis through the communications control section 6. Thereby, in a remote place, a user can supervise the existence of an abnormal occurrence now easily.
[0079] Moreover, with the 2nd operation gestalt, the configuration detecting element 15 detects the mark beforehand set up out of the static-image data received from facsimile apparatus, and it is made to perform control of the monitor field directed by the mark through the monitor field control section 16. This is enabled to specify the monitor field which a user desires in a remote place, and assignment of the fine monitor field which suited a user's needs more can be realized.
[0080] In addition, although the 1st [more than] and the 2nd operation gestalt explained using the analog public line network, this invention can be dealt also with a digital channel by it not being restricted to this and using the interface for digital channels.
[0081] Moreover, it is also possible to control to receive only the camera control from the facsimile apparatus beforehand specified as the facsimile communication point using the caller ID service performed by the ISDN (integrated services digital network) circuit. Since an addresser number is acquirable on D channel at the time of a call setup, after the communications control section 6 detects an addresser number, it judges whether the detected addresser number and the number of the external facsimile apparatus registered beforehand are the same, and, in the case of an inequality, can realize by controlling not to start the routine shown in drawing 8 .
[0082] Moreover, also in PSTN (Public Switched Telephone Network), it is possible to perform the notice of an addresser number with a DTMF (Dual Tone Multi Frequeney) signal. Therefore, it is also possible to control to receive only the camera control from the facsimile apparatus specified beforehand using this PSTN. By doing in this way, it can prevent the sense of a surveillance camera 3 being changeable with actuation of a third person on purpose.
[0083]
[Effect of the Invention] This invention is judged to be what abnormalities generated when a motion of an image was detected out of the dynamic-image data inputted from the surveillance camera and there was a motion, as mentioned above. Since the dynamic-image data with which the motion was detected are changed into static-image data and it was made to transmit to external facsimile apparatus, a user can supervise the existence of an abnormal occurrence easily from a remote place by putting facsimile apparatus on a user's basis. Thus, if the monitoring system of this invention is used, it can be managed even if it does not perform troublesome procedure, such as a contract with a security company. And since it can judge that abnormalities are not caused unless facsimile data are sent, it does not produce un-arranging [that monitor display must always be seen like before], either.
[0084] moreover, according to other descriptions of this invention, out of the static-image data received from external facsimile apparatus

Since the field or mark of a color set up beforehand is detected and it was made to control the monitor field corresponding to the detected color field or mark When a user transmits the static-image data which wrote in a desired color field or a desired mark to the monitoring system of this invention using facsimile apparatus the texture which can be made to change a monitor field corresponding to the color field or mark now, and a user desires in a remote place -- a warm monitor field can be set up freely.

[0085] Moreover, since only the monitor zone control based on the static-image data sent from the facsimile apparatus beforehand set up as a communication link place was received according to the description of others of this invention, the zone control from the facsimile apparatus which is not specified as a communication link place can be disregarded, and it can prevent changing a monitor field by actuation of a third person on purpose.

[0086] Moreover, since the data frame of the dynamic-image data photoed by the surveillance camera after control of the monitor field by the monitor field control means is changed into static-image data and it was made to surely transmit to external facsimile apparatus according to the description of others of this invention The static-image data about a monitor field changed according to assignment of a user can always be obtained now irrespective of the existence of a motion, and it can check whether the monitor field after remote control of a surveillance camera is the monitor field of hope certainly.

[Translation done.]